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EXAMINER	
SMITHERS, MATTHEW	
ART UNIT	**PAPER NUMBER**
2137	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/627,156	FEKRI, FARAMARZ	
	Examiner	Art Unit	
	Matthew B. Smithers	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: In paragraph [0007], the word cyphertext is misspelled.

Appropriate correction is required.

Claim Objections

Claim 37 is objected to because of the following informalities: As presently written, claim 33 (which is a claim to further limit an encoder) depends from claim 37 (which is a claim to further limit a method claim). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-55 are rejected under 35 U.S.C. 102(e) as being anticipated by 20030091184 granted to Chui.

Regarding claim 1, Chui meets the claimed limitations as follows:

"A system for encoding and decoding data for secure transmission, comprising:

an encryption system, wherein said encryption system is operable to receive plaintext and to perform an inverse wavelet transformation over a finite field on said plaintext to produce cyphertext;

and a decryption system in communication with said encryption system, wherein said decryption system is operable to receive said cyphertext and to reproduce said plaintext by performing a wavelet transformation over a finite field on said cyphertext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 2, Chui meets the claimed limitations as follows:
"The system of claim 1, wherein said cyphertext comprises either block cyphertext or stream cyphertext." see Abstract; and paragraph [0010].

Regarding claim 3, Chui meets the claimed limitations as follows:
"The system of claim 1, wherein said encryption system includes at least one filter for performing an inverse wavelet transformation over a finite field on said plaintext to produce said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 4, Chui meets the claimed limitations as follows:
"The system of claim 3, wherein said at least one filter comprises a digital filter, and wherein said digital filter is configured to exhibit a predefined transfer function defined

by a set of predefined filter coefficients, said filter coefficients defined to perform said mathematical inverse wavelet transformation on said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 5, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said decryption system includes at least one filter for performing a wavelet transformation over a finite field on said cyphertext to produce said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 6, Chui meets the claimed limitations as follows:

"The system of claim 5, wherein said at least one filter comprises a digital filter, and wherein said digital filter is configured to exhibit a predefined transfer function defined by a set of predefined filter coefficients, said filter coefficients defined to perform said mathematical wavelet transformation on said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 7, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said encryption system includes at least one feedback loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 8, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said decryption system includes at least one feedforward loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 9, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said encryption system includes at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 10, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said decryption system includes at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 11, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said encryption system and said decryption system are operable to encoding and decoding data used in at least one operation chosen from the group of operations consisting of authentication, hashing, and signature verification." see paragraph [0083](. . . a spectrum analysis is performed on the received voice signal to ensure that it has the spectral characteristics of a human voice before enabling decryption . . .); paragraph [0084] and Figures 17 and 18.

Regarding claim 12, Chui meets the claimed limitations as follows:

"The system of claim 1, wherein said encryption system is further operable to perform a second inverse wavelet transformation over a finite field to produce cyphertext, and wherein said decryption system is further operable to perform a second wavelet transformation over a finite field to reproduce said plaintext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding

transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 13, Chui meets the claimed limitations as follows:

"The system of claim 12, further comprising at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 14, Chui meets the claimed limitations as follows:

"A system for encoding and decoding data for secure transmission, comprising:

an encryption system, wherein said encryption system is operable to receive plaintext and to perform a wavelet transformation over a finite field on said plaintext to produce cyphertext;

and a decryption system in communication with said encryption system, wherein said decryption system is operable to receive said cyphertext and to reproduce said plaintext by performing an inverse wavelet transformation over a finite field on said cyphertext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 15, Chui meets the claimed limitations as follows:

"The system of claim 14, wherein said cyphertext comprises either block cyphertext or stream cyphertext." see Abstract; and paragraph [0010].

Regarding claim 16, Chui meets the claimed limitations as follows:

"The system of claim 14, wherein said encryption system includes at least one filter for performing a wavelet transformation over a finite field on said plaintext to produce said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 17, Chui meets the claimed limitations as follows:

"The system of claim 16, wherein said at least one filter comprises a digital filter, and wherein said digital filter is configured to exhibit a predefined transfer function defined by a set of predefined filter coefficients, said filter coefficients defined to perform said mathematical wavelet transformation on said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 18, Chui meets the claimed limitations as follows:

"The system of claim 14, wherein said decryption system includes at least one filter for performing an inverse wavelet transformation over a finite field on said cyphertext to produce said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 19, Chui meets the claimed limitations as follows:

"The system of claim 18, wherein said at least one filter comprises a digital filter, and wherein said digital filter is configured to exhibit a predefined transfer function defined by a set of predefined filter coefficients, said filter coefficients defined to perform said mathematical inverse wavelet transformation on said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 20, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said encryption system includes at least one feedback loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 21, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said decryption system includes at least one feedforward loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 22, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said encryption system includes at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 23, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said decryption system includes at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 24, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said encryption system and said decryption system are operable to encoding and decoding data used in at least one operation chosen from the group of operations consisting of authentication, hashing, and signature verification." see paragraph [0083](. . . a spectrum analysis is performed on the received voice signal

to ensure that it has the spectral characteristics of a human voice before enabling decryption . . .); paragraph [0084] and Figures 17 and 18.

Regarding claim 25, Chui meets the claimed limitations as follows: "The system of claim 14, wherein said encryption system is further operable to perform a second wavelet transformation over a finite field to produce cyphertext, and wherein said decryption system is further operable to perform a second inverse wavelet transformation over a finite field to reproduce said plaintext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 26, Chui meets the claimed limitations as follows: "The system of claim 25, further comprising at least one non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 27, Chui meets the claimed limitations as follows: "An encoder for enabling encryption of an plaintext, comprising means for receiving an plaintext and means for performing a mathematical inverse wavelet transformation over a finite field on said plaintext to produce cyphertext." see paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 28, Chui meets the claimed limitations as follows:

"The encoder of claim 27, wherein said cyphertext is selected from the group consisting of block data or stream data." see Abstract; and paragraph [0010].

Regarding claim 29, Chui meets the claimed limitations as follows:

"The encoder of claim 27, wherein said means for performing a mathematical inverse wavelet transformation is a filter." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 30, Chui meets the claimed limitations as follows:

"The encoder of claim 27, wherein said means for performing a mathematical inverse wavelet transformation is a digital filter, said digital filter configured to exhibit a predefined transfer function defined by a set of predefined filter coefficients, said filter coefficients being defined to perform said mathematical inverse wavelet transformation on said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 31, Chui meets the claimed limitations as follows:

"The encoder of claim 27, wherein said means for performing a mathematical inverse wavelet transformation is an analog filter, said analog filter configured to exhibit a predefined transfer function defined by a set of predefined filter parameters, said predefined filter parameters defining said mathematical inverse wavelet transformation." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 32, Chui meets the claimed limitations as follows:

"The encoder of claim 27, further comprising a means for performing a mathematical wavelet transformation over said finite field on said plaintext, in addition to said mathematical inverse wavelet transformation, in order to produce said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 33, Chui meets the claimed limitations as follows:

"The encoder of claim 37, further comprising a means for communicating said cyphertext over a wireless communication medium." see paragraph [0109].

Regarding claim 34, Chui meets the claimed limitations as follows:

"An encoder for enabling encryption of an plaintext, comprising means for receiving an plaintext and means for performing a mathematical wavelet transformation over a finite field on said plaintext to produce cyphertext." see paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 35, Chui meets the claimed limitations as follows:

"A method for transmitting encrypting data, comprising the steps of:

receiving plaintext;

performing a mathematical wavelet transformation over a finite field on said plaintext to produce cyphertext;

and transmitting said cyphertext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-

decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11, 12, 14 and 15.

Regarding claim 36, Chui meets the claimed limitations as follows: "The method of claim 35, wherein the step of performing a mathematical wavelet transformation comprises the step of performing a mathematical inverse wavelet transformation." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 37, Chui meets the claimed limitations as follows: "The method of claim 35, further comprising the steps of: receiving said plaintext at a digital filter; and implementing said performing step by causing said digital filter to exhibit a predefined transfer function defined by a set of predefined filter coefficients." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 38, Chui meets the claimed limitations as follows: "The method of claim 35, further comprising the steps of: receiving said plaintext at an analog filter; and implementing said performing step by causing said analog filter to exhibit a predefined transfer function defined by a set of predefined filter parameters, said predefined filter parameters defining said mathematical inverse wavelet transformation." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 39, Chui meets the claimed limitations as follows:

"The method of claim 35, further comprising the step of performing a mathematical wavelet transformation over said finite field on said plaintext, in addition to said mathematical inverse wavelet transformation, to produce said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 40, Chui meets the claimed limitations as follows:

"A decoder, comprising a means for receiving cyphertext and for performing a mathematical wavelet transformation over a finite field on said cyphertext to produce an plaintext." see paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 41, Chui meets the claimed limitations as follows:

"The decoder of claim 40, wherein said means is at least one filter." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 42, Chui meets the claimed limitations as follows:

"The decoder of claim 40, wherein said decoder includes means operable to perform a mathematical inverse wavelet transformation in addition to performing said mathematical wavelet transformation." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 43, Chui meets the claimed limitations as follows:

"The decoder of claim 40, further comprising a means for deriving a plurality of wavelet coefficients based upon said cyphertext to produce said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 44, Chui meets the claimed limitations as follows:

"The decoder of claim 40, wherein said means is a digital filter, said digital filter configured to exhibit a predefined transfer function defined by a set of predefined filter coefficients, said filter coefficients being defined to perform said mathematical wavelet transformation on said cyphertext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 45, Chui meets the claimed limitations as follows:

"The decoder of claim 40, wherein said means is an analog filter, said analog filter configured to exhibit a predefined transfer function defined by a set of predefined filter parameters, said predefined filter parameters defining said mathematical wavelet transformation." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 46, Chui meets the claimed limitations as follows:

"The decoder of claim 40, further comprising a means for receiving said cyphertext from a wireless communications medium." see paragraph [0109].

Regarding claim 47, Chui meets the claimed limitations as follows:

"A method for encoding and decoding data for secure transmission, comprising:

receiving plaintext at an encryption system;

performing an inverse wavelet transformation over a finite field on said plaintext to produce cyphertext;

receiving said cyphertext at a decryption system in communication with said encryption system;

and reproducing said plaintext by performing a wavelet transformation over a finite field on said cyphertext." see paragraphs [0055]-[0057]; paragraph [0060] (. . . transform encryption system **100** and the corresponding transform-decryption **110** . . . encryption and decryption operations are interweaved with DWT and IDWT operations. . .); paragraphs [0061]-[0071]; paragraphs [0106]-[0116]; and Figures 1, 2, 11 and 12.

Regarding claim 48, Chui meets the claimed limitations as follows:

"The method of claim 47, wherein said cyphertext comprises either block cyphertext or stream cyphertext." see Abstract; and paragraph [0010].

Regarding claim 49, Chui meets the claimed limitations as follows:

"The method of claim 47, further comprising performing an inverse wavelet transformation over a finite field on said plaintext to produce cyphertext using at least one." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 50, Chui meets the claimed limitations as follows:

"The method of claim 49, wherein said at least one filter exhibits a predefined transfer function defined by a set of predefined filter coefficients, and wherein said filter coefficients are used to perform said mathematical inverse wavelet transformation on

said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 51, Chui meets the claimed limitations as follows: "The method of claim 47, wherein the step of reproducing said plaintext by performing a wavelet transformation over a finite field on said cyphertext comprises reproducing said plaintext using at least one filter for performing a wavelet transformation over a finite field on said cyphertext to produce said plaintext." see paragraphs [0064]-[0066]; paragraphs [0070]-[0071]; paragraphs [0106]-[0116]; and Figures 3, 4, 9, and 10.

Regarding claim 52, Chui meets the claimed limitations as follows: "The method of claim 47, wherein said step of performing an inverse wavelet transformation includes performing an inverse wavelet transformation using at least one feedback loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 53, Chui meets the claimed limitations as follows: "The method of claim 47, wherein said step of performing a wavelet transformation includes performing a wavelet transformation using at least one feedforward loop." see paragraphs [0021]-[0022]; paragraph [0069]; paragraph [0073]; paragraph [0079]; and Figures 22, 24, 25 and 26.

Regarding claim 54, Chui meets the claimed limitations as follows: "The method of claim 47, wherein said step of performing an inverse wavelet transformation includes performing an inverse wavelet transformation using at least one

non-linear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Regarding claim 55, Chui meets the claimed limitations as follows: "The method of claim 47, wherein said step of performing a wavelet transformation includes performing a wavelet transformation using at least one nonlinear device." see paragraph [0089]; paragraphs [0098]-0105] and Figures 22, 24, 25 and 26.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. Short (US 20030169940) discloses a method for compressing and decompressing files using a chaotic system.

B. Tsujii et al (US 20030007674) discloses a method for processing images using wavelet transforms.

C. Chui (US 6,600,838) discloses a method for performing wavelet transformations on digital data.

D. Parker et al (US 6,363,153) discloses a method for secure digital communication.

E. Corron et al (US 6,216,093) discloses a method for communication with waveforms.

F. Miller et al (US 5,680,462) discloses an encoding/decoding system using chaotic transforms.

G. Dang et al., Image Encryption for Secure Internet Multimedia Applications, discloses a method for securing digital images using wavelet transforms and DES.

H. Ratha et al., Secure Data Hiding in Wavelet Compressed Fingerprint Images, discloses a method for transmitting secure digital images and validating the received image where the images undergo a wavelet transformation.

I. Shien Lu et al., Structural Digital Signature for Image Authentication: An Incidental Distortion Resistant Scheme, discloses an authentication method whereby image content in the wavelet transform domain is used to construct the digital signature.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew B. Smithers whose telephone number is (571) 272-3876. The examiner can normally be reached on Monday-Friday (8:00-4:30) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel L. Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew B. Smithers
Primary Examiner
Art Unit 2137